

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name

ZP-4A

Name: Zeolite, cuboidal, crystalline, synthetic, non-fibrous (CAS: 1318-02-1, EC: 930-915-9)**REACH Registration number:** 01-2119429034-49-0017**Synonyms**

The product names refer to additional codes representing different material grades: ZP-4A, ZP-4A-TSR, ZP-4A-HD, ZP-4A-LD, ZP-4A-FEED, ZP-HAB60



<https://my.chemius.net/p/EzeW1n/en/pd/en>

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses

Industrial use.

Uses advised against

Not known.

1.3 Details of the supplier of the safety data sheet

Manufacturer

SILKEM, d. o. o.
Tovarniška cesta 10
2325 Kidričevo, Slovenia
+386 2 7991 200
info@silkem.si

1.4 Emergency Telephone Number

Emergency

112

Supplier

+386 2 7991 208 (7h - 15h)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

According to the regulation, the chemical is not classified as hazardous.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)**Hazard statements:**

Not applicable.

Supplemental hazard information (EU):

Not applicable.

Precautionary statements:

Not applicable.

2.3 Other hazards

PBT/vPvB

No information.

Endocrine disrupting properties

The product does not contain substances with the potential for endocrine disorders.

Additional information

The substances in the product are not classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Name	CAS EC Index REACH	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Concentration Limits	Notes for substances
Zeolite, cuboidal, crystalline, synthetic, non- fibrous	1318-02-1 930-915-9 - 01-2119429034- 49-0017	>99	/	/	/

3.2 Mixtures

For substances see 3.1.

Product description

EINECS: 215-283-8 and CAS: 1318-02-1 are merely used for information as related numbers and as a pre-registration identifier. EINECS numbers mentioned here have been designated by ECHA after registration.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General notes

When in doubt or if feeling unwell seek medical assistance.

Following inhalation

Remove patient to fresh air - move out of dangerous area. Ventilate the premises. Inhale fresh air. If symptoms develop and persist, seek medical attention.

Following skin contact

Product is not irritating to the skin. Areas of the body that have come into contact with the product must be rinsed with water.

Following eye contact

If substance has got into eyes, immediately wash out with plenty of water. If irritation persists, seek professional medical attention.

Following ingestion

In case of doubt or if feeling unwell seek medical help.

4.2 Most important symptoms and effects, both acute and delayed

Following inhalation

No information.

Following skin contact

No information.

Following eye contact

No information.

Following ingestion

No information.

4.3 Indication of any immediate medical attention and special treatment needed

No information.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media**Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam.

Unsuitable extinguishing media

Full water jet.

5.2 Special hazards arising from the substance or mixture**Hazardous combustion products**

No information.

5.3 Advice for firefighters**Protective actions**

In case of fire or heating do not breathe fumes/vapours.

Special protective equipment for fire-fighters

In case of fire: Wear suitable respiratory equipment - self-contained breathing apparatus and full protective equipment.

Additional information

Contaminated firefighting water must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures**For non-emergency personnel****Protective equipment**

Use personal protective equipment (Section 8). Thoroughly clean hands after use or contact.

Precautionary measures

Avoid dust generation.

Emergency procedures

No information.

For emergency responders

Wear appropriate personal protective equipment!

6.2 Environmental precautions

If accidental large entry into water or ground occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

For containment

No information.

For cleaning up

Pick up mechanically and remove it in accordance with regulation.

Other information

No information.

6.4 Reference to other sections

See also sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures

Measures to prevent fire

Take precautionary measures against static discharges.

Measures to prevent aerosol and dust generation

Prevent dust formation. Ensure good ventilation and extraction.

Measures to protect the environment

Avoid release to the environment.

Other measures

No information.

Advice on general occupational hygiene

Avoid contact with skin and eyes. Use personal protective equipment. Do not eat or drink while working.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep in well closed containers. Keep in a dry place. Keep container in a well ventilated place. Keep away from food, drink and animal feeding stuffs. This product is hygroscopic.

Packaging materials

No information.

Requirements for storage rooms and vessels

No information.

Storage temperature

No information.

Storage class

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Further information on storage conditions

No information.

7.3 Specific end use(s)

Recommendations

No information.

Industrial sector specific solutions

No information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters****Occupational Exposure limit values**

Name	mg/m ³	ml/m ³	Short-term value mg/m ³	Short-term value ml/m ³	Remark	Biological Tolerance Values
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	10	/	/	/	WEL long-term, inhalable	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	4	/	/	/	WEL long-term, respirable	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	3	/	6	/	AGW (ALVEO); Allg. Staubg.: TRGS 900 2.4 AGS	/

Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

DNEL/DMEL values**For product**

No information.

For components

Name	Type	Exposure route	exp. frequency	Remark	Value
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	Worker	inhalation	long term	/	3 mg/m ³
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	Worker	dermal	long term	/	2.5 mg/kg bw/day

PNEC values**For product**

No information.

For components

Name	Exposure route	Remark	Value
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	fresh water	/	3.2 mg/L
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	marine water	/	0.32 mg/L
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	soil	/	600 mg/kg dw

8.2 Exposure controls

Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Handle in accordance with good industrial hygiene and safety practice.

Structural measures to prevent exposure

No information.

Organisational measures to prevent exposure

Keep eyewash bottles or personal eyewash units available.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration.

Personal protective equipment

Eye and face protection

Safety glasses with side protection (BS EN ISO 16321-1:2022/A1:2025).

Hand protection

Protective gloves (EN 374).

Appropriate materials

No information.

Skin protection

Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345).

Respiratory protection

Not needed under normal use and adequate ventilation. Mask with dust filter (P2) or FFP2 (EN 149).

Thermal hazards

No information.

Environmental exposure controls

Substance/mixture related measures to prevent exposure

No information.

Instruction measures to prevent exposure

No information.

Organisational measures to prevent exposure

No information.

Technical measures to prevent exposure

No information.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Important health, safety and environmental information

Physical state	solid
Shape	No information.
Colour	white
Odour	odourless
Odour threshold	No information.
Melting/freezing point	> 400 °C
Boiling point or initial boiling point and boiling range	Not relevant
Flammability	Not relevant
Lower and upper explosion limit	Not relevant
Flash point	Not relevant
Auto-ignition temperature	Not relevant
Decomposition temperature	No information.
pH	11 — 12 (5%)
Viscosity (dynamic)	Not applicable, the product is a solid.
Solubility (Water)	very low solubility
Partition coefficient n-octanol/water (log value)	No information.
Vapour pressure	Not relevant
Bulk density	200 — 400 kg/m ³
Relative vapour/gas density	No information.
Particle characteristics	No information.

9.2 Other information

Information with regard to physical hazard classes

Explosive properties	Product is not explosive.
Oxidising solids	Not oxidising.

Other safety characteristics

Evaporation rate	Not relevant
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Other information

Hygroscopic.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Product is stable under normal conditions.

10.3 Possibility of hazardous reactions

The product is stable under recommended storage and handling conditions.

10.4 Conditions to avoid

No special precautions required. Consider the directions for use and storage. Protect from moisture and water - keep in dry place.

10.5 Incompatible materials

Not known.

10.6 Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****(a) Acute toxicity****For product**

Exposure route	Type	Species	Time	Value	Method	Remark
inhalation	LC ₅₀	rat	4 h	18.3 mg/L	/	dust/aerosol
dermal	LD ₅₀	rabbit	/	2000 mg/kg	/	/
oral	LD ₅₀	rat	/	10000 mg/kg	/	/

For components

Name	Exposure route	Type	Species	Time	Value	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	oral	LD ₅₀	Dog	/	1000 - 31600 mg/kg	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	oral	LD ₅₀	rat	/	5000 - 31600 mg/kg	/	/

(b) Skin corrosion/irritation**For components**

Name	Species	Time	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	/	/	Non-irritant.	/	/

(c) Serious eye damage/irritation

No information.

(d) Respiratory or skin sensitisation

For components

Name	Exposure route	Species	Time	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	-	/	/	Non sensitising.	/	/

(e) (Germ cell) mutagenicity

For components

Name	Type	Species	Time	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	/	/	/	Negative.	/	/

(f) Carcinogenicity

For components

Name	Exposure route	Type	Species	Time	Value	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	/	/	/	/	/	Negative	/	/

(g) Reproductive toxicity

For components

Name	Reproductive toxicity type	Type	Species	Time	Value	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	-	-	/	/	/	Negative.	/	/

(h) STOT-single exposure

No information.

(i) STOT-repeated exposure

No information.

(j) Aspiration hazard

No information.

Symptoms related to the physical, chemical and toxicological characteristics

No information.

Interactive effects

No information.

11.2 Information on other hazards

Endocrine disrupting properties

The product does not contain substances with the potential for endocrine disorders.

Other information

No information.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Acute (short-term) toxicity**For product**

Type	Exposure time	Species	Organism	Method	Remark	Value
EC ₅₀	72 h	algae	/	/	/	560 - 1000 mg/L
LC ₅₀	96 h	fish	/	/	/	1800 - 3200 mg/L

For components

Name	Type	Value	Exposure time	Species	Organism	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	EC ₅₀	> 100 mg/L	48 h	daphnia	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	LC ₅₀	> 680 mg/L	96 h	fish	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	EC ₅₀	> 300 mg/L	96 h	algae	/	/	/

Chronic (long-term) toxicity**For components**

Name	Type	Value	Exposure time	Species	Organism	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	NOEC	> 86.7 mg/L	/	fish	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	NOEC	32 mg/L	/	aquatic invertebrate	/	/	/

Name	Type	Value	Exposure time	Species	Organism	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	NOEC	> 200 mg/L	/	sediment organisms	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	LC ₅₀	9000 mg/kg soil dw	23 days	Terrestrial plants	/	OECD 208	seedling emergence
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	EC ₅₀	9000 mg/kg soil dw	/	Terrestrial plants	/	OECD 208	seedling growth
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	NOEC	5000 mg/kg soil dw	/	Terrestrial plants	/	OECD 208	/

12.2 Persistence and degradability

Abiotic degradation, physical- and photo-chemical elimination

No information.

Biodegradation

No information.

12.3 Bioaccumulative potential

Partition coefficient n-octanol/water (log value)

No information.

Bioconcentration factor (BCF)

For components

Name	Species	Organism	Value	Duration	Evaluation	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	-	/	/	/	Does not bioaccumulate.	/	/

12.4 Mobility in soil

Known or predicted distribution to environmental compartments

No information.

Surface tension

No information.

Adsorption/Desorption

No information.

12.5 Results of PBT and vPvB assessment

No evaluation.

12.6 Endocrine disrupting properties

The product does not contain substances with the potential for endocrine disorders.

12.7 Other adverse effects

No information.

12.8 Additional information

For product

Avoid release to the environment.

For components

Zeolite, cuboidal, crystalline, synthetic, non-fibrous

WGK: 0

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / Packaging disposal

Waste chemical

Waste should be handled in accordance with national regulations.

Waste codes / waste designations according to LoW

No information.

Packaging

Deliver completely emptied containers to approved waste disposal authorities.

Waste codes / waste designations according to LoW

No information.

Waste treatment-relevant information

Disposal in accordance with the Rules on the management of waste.

Sewage disposal-relevant information

No information.

Other disposal recommendations

No information.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number or ID number

ADR/RID	IMDG	IATA	ADN
Not dangerous according to transport regulations.	Not dangerous according to transport regulations.	Not dangerous according to transport regulations.	Not dangerous according to transport regulations.

14.2 UN proper shipping name

ADR/RID	IMDG	IATA	ADN
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable

14.3 Transport hazard class(es)

ADR/RID	IMDG	IATA	ADN
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable

14.4 Packing group

ADR/RID	IMDG	IATA	ADN
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable

14.5 Environmental hazards

ADR/RID	IMDG	IATA	ADN
NO	NO	NO	NO

14.6 Special precautions for user

ADR/RID	IMDG	IATA	ADN
Limited quantities: Not given/not applicable	Limited quantities: Not given/not applicable		Limited quantities: Not given/not applicable

14.7 Maritime transport in bulk according to IMO instruments

ADR/RID	IMDG	IATA	ADN
/	Not given/not applicable	/	/

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2020/878)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

- EH40/2005 Workplace exposure limits (Fourth Edition 2020)

Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

not applicable

Ingredients according to Regulation (EC) No 648/2004 on detergents

No information.

Special instructions

No information.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION

Indication of changes

1.1 Product identifier 1.3 Details of the supplier of the safety data sheet 1.4 Emergency Telephone Number 2.2 Label elements 3.1 Substances 8.1 Control parameters 8.2 Exposure controls 9.1 Information on basic physical and chemical properties 9.2 Other information 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 11.2 Information on other hazards 12.1 Toxicity 12.6 Endocrine disrupting properties 13.1 Waste treatment methods 14.3 Transport hazard class(es) 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Key literature references and sources for data

No information.

Abbreviations and acronyms

ATE - Acute Toxicity Estimate
 ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
 ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 CEN - European Committee for Standardisation
 C&L - Classification and Labelling
 CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
 CAS# - Chemical Abstracts Service number
 CMR - Carcinogen, Mutagen, or Reproductive Toxicant
 CSA - Chemical Safety Assessment
 CSR - Chemical Safety Report
 DMEL - Derived Minimal Effect Level
 DNEL - Derived No Effect Level
 DPD - Dangerous Preparations Directive 1999/45/EC
 DSD - Dangerous Substances Directive 67/548/EEC
 DU - Downstream User
 EC - European Community
 ECHA - European Chemicals Agency
 EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
 EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
 EEC - European Economic Community
 EINECS - European Inventory of Existing Commercial Substances
 ELINCS - European List of notified Chemical Substances
 EN - European Standard
 EQS - Environmental Quality Standard
 EU - European Union
 Euphrac - European Phrase Catalogue
 EWC - European Waste Catalogue (replaced by LoW – see below)
 GES - Generic Exposure Scenario
 GHS - Globally Harmonized System
 IATA - International Air Transport Association
 ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
 IMDG - International Maritime Dangerous Goods
 IMSBC - International Maritime Solid Bulk Cargoes
 IT - Information Technology
 IUCLID - International Uniform Chemical Information Database
 IUPAC - International Union for Pure Applied Chemistry
 JRC - Joint Research Centre
 Kow - octanol-water partition coefficient
 LC50 - Lethal Concentration to 50 % of a test population
 LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
 LE - Legal Entity
 LoW - List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)
 LR - Lead Registrant
 M/I - Manufacturer / Importer
 MS - Member States
 MSDS - Material Safety Data Sheet
 OC - Operational Conditions
 OECD - Organization for Economic Co-operation and Development
 OEL - Occupational Exposure Limit
 OJ - Official Journal
 OR - Only Representative

OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals (Regulation (EC) No 1907/2006)
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

List of relevant H phrases

No information.